



IAP7 Rec'd PCT/PTO 08 FEB 2006 PCT

PATENT
Customer No. 22,852
Attorney Docket No. 3715.0151-00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Philippe SANSONETTI et al.) Group Art Unit: Unassigned
Application No.: 10/551,040) Examiner: Unassigned
Int'l. Filing Date: March 29, 2004)
For: A METHOD FOR MODULATING)
NOD1 ACTIVITY, USE OF A MTP)
RELATED MOLECULE FOR)
MODULATING NOD1 ACTIVITY,)
AND THERAPEUTIC)
APPLICATIONS THEREOF)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), Applicants bring to the attention of the Examiner the documents on the attached listing. This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits for the above-referenced application.

Copies of the listed foreign and non-patent literature documents are attached.

Copies of the U.S. patent publications are not enclosed.

Applicants respectfully request that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in the application and Applicants determines that the cited documents do not constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.
William B. Meyers Reg. No. 54,386

Dated: February 8, 2006

By: *William B. Meyers*
for : Kenneth J. Meyers
Reg. No. 25,146
Phone: (202) 408-4033
Fax: (202) 408-4400
E-mail: ken.meyers@finnegan.com

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

1

of

3

Complete if Known

| | |
|-----------------------------|---------------------|
| Application Number | 10/551,040 |
| Int'l. Filing Date | March 29, 2004 |
| First Named Inventor | Philippe SANSONETTE |
| Art Unit | Unassigned |
| Examiner Name | Unassigned |

FEB 08 2005

U.S. PATENT AND TRADEMARK OFFICE

Attorney Docket Number

3715.0151-00

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

| Examiner Initials | Cite No. ¹ | Document Number | Issue or Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
|-------------------|-----------------------|--|---|---|---|
| | | Number-Kind Code ² (if known) | | | |
| J.H./ | US-2002/0197693 | | 12/26/2002 | Berlin | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Note: Submission of copies of U.S. Patents and published U.S. Patent Applications is not required.

FOREIGN PATENT DOCUMENTS

| Examiner Initials | Cite No. ¹ | Foreign Patent Document | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear | Translation ⁶ |
|-------------------|-----------------------|---|--------------------------------|---|---|--------------------------|
| | | Country Code ³ Number ⁴ Kind Code ⁵ (if known) | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

NON PATENT LITERATURE DOCUMENTS

| Examiner Initials | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | Translation ⁶ |
|-------------------|--|---|--------------------------|
| J.H./ | PCT/IB2004/001318 | International Preliminary Report on Patentability, mailed October 13, 2005 | |
| J.H./ | AKIRA et al., "Toll-like receptors: critical proteins linking innate and acquired immunity", <i>Nature Immunology</i> , Vol. 2, No. 8, pp. 675-680 (2001) | | |
| J.H./ | ASKEW et al., "Molecular Recognition with Convergent Functional Groups. 6. Synthetic and Structural Studies with a Model Receptor for Nucleic Acid Components", <i>J. Am. Chem. Soc.</i> , Vol. 111, pp. 1082-1090 (1989) | | |
| J.H./ | BERTIN et al., "Human CARD4 Protein Is a Novel CED-4/Apaf-1 Cell Death Family Member That Activates NF- κ B", <i>The Journal of Biological Chemistry</i> , Vol. 274, No. 19, pp. 12955-12958 (1999) | | |
| J.H./ | BLACKBURN et al., "Identification of Four Families of Peptidoglycan Lytic Transglycosylases", <i>Journal of Molecular Evolution</i> , Vol. 52, pp. 78-84 (2001) | | |
| J.H./ | CARBALLO et al., "Elucidation of the structure of an alanine-lacking core tetrasaccharide triphosphate from the lipopolysaccharide of <i>Pseudomonas aeruginosa</i> mutant H4", <i>Eur. J. Biochem.</i> , Vol. 261, pp. 500-508 (1999) | | |
| J.H./ | CHIN et al., "Involvement of receptor-interacting protein 2 in innate and adaptive immune responses", <i>Nature</i> , Vol. 416, pp. 190-194 (2002) | | |
| J.H./ | CHOE et al., "Requirement for a Peptidoglycan Recognition Protein (PGRP) in Relish Activation and Antibacterial Immune Responses in <i>Drosophila</i> ", <i>Science</i> , Vol. 296, pp. 359-362 (2002) | | |
| J.H./ | DE JONGE et al., "Peptidoglycan Composition of a Highly Methicillin-resistant <i>Staphylococcus aureus</i> Strain", <i>The Journal of Biological Chemistry</i> , Vol. 267, No. 16, pp. 11248-11254 (1992) | | |
| J.H./ | ECKMANN et al., "Analysis by High Density cDNA Arrays of Altered Gene Expression in Human Intestinal Epithelial Cells in Response to Infection with the Invasive Enteric Bacteria <i>Salmonella</i> ", <i>The Journal of Biological Chemistry</i> , Vol. 275, No. 19, pp. 14084-14094 (2000) | | |
| J.H./ | GIRARDIN et al., "CARD4/NOD1 mediates NF- κ B and JNK activation by invasive <i>Shigella flexneri</i> ," <i>EMBO Reports</i> , Vol. 2, No. 8, pp. 736-742 (2001) | | |
| J.H./ | GIRARDIN et al., "Nod2 Is a General Sensor of Peptidoglycan through Muramyl Dipeptide (MDP) Detection", <i>The Journal of Biological Chemistry</i> , Vol. 278, No. 11, pp. 8869-8872 (2003) | | |
| J.H./ | GIRARDIN et al., "Peptidoglycan Molecular Requirements Allowing Detection by Nod1 and Nod2", <i>The Journal of Biological Chemistry</i> , Vol. 278, No. 43, pp. 41702-41708 (2003) | | |

Complete if Known

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)



Sheet

2

of

3

| | |
|------------------------|---------------------|
| Application Number | 10/551,040 |
| Int'l. Filing Date | March 29, 2004 |
| First Named Inventor | Philippe SANSONETTI |
| Art Unit | Unassigned |
| Examiner Name | Unassigned |
| Attorney Docket Number | 3715.0151-00 |

NON PATENT LITERATURE DOCUMENTS

| | |
|--------|--|
| /J.H./ | GLAUNER, "Separation and Quantification of Muropeptides with High-Performance Liquid Chromatography", <i>Analytical Biochemistry</i> , Vol. 172, pp. 451-464 (1988) |
| /J.H./ | GOTTAR et al., "The <i>Drosophila</i> immune response against Gram-negative bacteria is mediated by a peptidoglycan recognition protein", <i>Nature</i> , Vol. 416, pp. 640-644 (2002) |
| /J.H./ | HAYASHI et al., "A Rapid Determination of Sodium Dodecyl Sulfate with Methylene Blue", <i>Analytical Biochemistry</i> , Vol. 67, pp. 503-506 (1975) |
| /J.H./ | HAYASHI et al., "The innate immune response to bacterial flagellin is mediated by Toll-like receptor 5", <i>Nature</i> , Vol. 410, pp. 1098-1103 (2001) |
| /J.H./ | HOLTJE et al., "Growth of the Stress-Bearing and Shape-Maintaining Murein Sacculus of <i>Escherichia coli</i> ", <i>Microbiology and Molecular Biology Reviews</i> , Vol. 62, No. 1, pp. 181-203 (1998) |
| /J.H./ | HUGOT et al., "Association of NOD2 leucine-rich repeat variants with susceptibility to Crohn's disease", <i>Nature</i> , Vol. 411, pp. 599-603 (2001) |
| /J.H./ | INOHARA et al., "An Induced Proximity Model for NF- κ B Activation in the Nod1/RICK and RIP Signaling Pathways", <i>The Journal of Biological Chemistry</i> , Vol. 275, No. 36, pp. 27823-27831 (2000) |
| /J.H./ | INOHARA et al., "Host Recognition of Bacterial Muramyl DiPeptide Mediated through NOD2", <i>The Journal of Biological Chemistry</i> , Vol. 278, No. 8, pp. 5509-5512 (2003) |
| /J.H./ | INOHARA et al., "Human Nod1 Confers Responsiveness to Bacterial Lipopolysaccharides", <i>The Journal of Biological Chemistry</i> , Vol. 276, No. 4, pp. 2551-2554 (2001) |
| /J.H./ | INOHARA et al., "Nod1, an Apaf-1 like Activator of Caspase-9 and Nuclear Factor κ B", <i>The Journal of Biological Chemistry</i> , Vol. 274, No. 21, pp. 14560-14567 (1999) |
| /J.H./ | KAWAI et al., "Unresponsiveness of MyD88-Deficient Mice to Endotoxin", <i>Immunity</i> , Vol. 11, pp. 115-122 (1999) |
| /J.H./ | KOBAYASHI et al., "RICK/Rip2/CARDIAK mediates signalling for receptors of the innate and adaptive immune systems", <i>Nature</i> , Vol. 416, pp. 194-199 (2002) |
| /J.H./ | LEE et al., "Two Lipoproteins Extracted from <i>Escherichia coli</i> K-12 LCD25 Lipopolysaccharide Are the Major Components Responsible for Toll-Like Receptor 2-Mediated Signaling", <i>The American Association of Immunologists</i> , Vol. 168, pp. 4012-4017 (2002) |
| /J.H./ | LEMAITRE et al., "The Dorsalventral Regulatory Gene Cassette <i>spätzle/Toll/cactus</i> Controls the Potent Antifungal Response in <i>Drosophila</i> Adults", <i>Cell</i> , Vol. 86, pp. 973-983 (1996) |
| /J.H./ | LEWIS et al., "Automated site-directed drug design: the concept of spacer skeletons for primary structure generation", <i>Proc. R. Soc. Lond.</i> , Vol. B236, pp. 125-140 (1989) |
| /J.H./ | LEWIS et al., "Automated site-directed drug design: the formation of molecular templates in primary structure generation", <i>Proc. R. Soc. Lond.</i> , Vol. B236, pp. 141-162 (1989) |
| /J.H./ | MCKINLAY et al., "Rational Design of Antiviral Agents", <i>Ann. Rev. Pharmacol. Toxicol.</i> , Vol. 29, pp. 111-122 (1989) |
| /J.H./ | MCLAUGHLAN et al., "Molecular characterization of an autolytic amidase of <i>Listeria monocytogenes</i> EGD", <i>Microbiology</i> , Vol. 144, pp. 1359-1367 (1998) |
| /J.H./ | MEDZHITOV, "Toll-Like Receptors And Innate Immunity", <i>Nature Immunology</i> , Vol. 1, pp. 135-145 (2001) |
| /J.H./ | MICHEL et al., "Drosophila Toll is activated by Gram-positive bacteria through a circulating peptidoglycan recognition protein", <i>Nature</i> , Vol. 414, pp. 756-759 (2001) |
| /J.H./ | OGURA et al., "A frameshift mutation in NOD2 associated with susceptibility to Crohn's disease", <i>Nature</i> , Vol. 411, pp. 603-606 (2001) |
| /J.H./ | OGURA et al., "Nod2, a Nod1/Apaf-1 Family Member That Is Restricted to Monocytes and Activates NF- κ B", <i>The Journal of Biological Chemistry</i> , Vol. 276, No. 7, pp. 4812-4818 (2001) |
| /J.H./ | PÉDRON et al., "The Invasive Phenotype of <i>Shigella flexneri</i> Directs a Distinct Gene Expression Pattern in the Human Intestinal Epithelial Cell Line Caco-2", <i>The Journal of Biological Chemistry</i> , Vol. 278, No. 36, pp. 33878-33886 (2003) |
| /J.H./ | PERRY et al., "The Use of 3D Modelling Databases for Identifying Structure Activity Relationships", <i>Quantitative Structure-Activity Relationships in Drug Design</i> , pp. 189-193 (1989) |
| /J.H./ | PHILPOTT et al., "Invasive <i>Shigella flexneri</i> Activates NF- κ B Through a Lipopolysaccharide-Dependent Innate Intracellular Response and Leads to IL-8 Expression in Epithelial Cells", <i>The American Association of Immunologists</i> , Vol. 165, pp. 903-914 (2000) |
| /J.H./ | RAMET et al., "Functional genomic analysis of phagocytosis and identification of a <i>Drosophila</i> receptor for <i>E. coli</i> Nature", Vol. 416, pp. 644-648 (2002) |
| /J.H./ | RIPKA, "Computers picture the perfect drug", <i>New Scientist</i> , pp. 54-58 (1988) |

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

3

of

3

Complete if Known

Application Number

10/551,040

Int'l. Filing Date

March 29, 2004

First Named Inventor

Philippe SANSONE

Art Unit

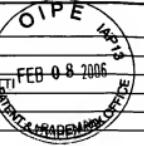
Unassigned

Examiner Name

Unassigned

Attorney Docket Number

3715.0151-00



| | | |
|--------|---|--|
| /J.H./ | ROUVINEN et al., "Computer-Aided Drug Design", <i>Acta Pharmaceutica Fennica</i> , Vol. 97, pp. 159-166 (1988) | |
| /J.H./ | UEHARA et al., "Identification of MpaA, an Amidase in <i>Escherichia coli</i> That Hydrolyzes the γ -D-Glutamyl- <i>meso</i> -Diaminopimelate Bond in Murein Peptides", <i>Journal of Bacteriology</i> , Vol. 185, No. 2, pp. 679-682 (2003) | |

| | | | |
|--------------------|------------------|-----------------|------------|
| Examiner Signature | /Jennifer Harle/ | Date Considered | 03/06/2008 |
|--------------------|------------------|-----------------|------------|

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.